

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the subject application. The final Office Action of November 5, 2002 has been received and contents carefully reviewed.

The Examiner objected to the disclosure because of informalities. The change to Figure 1 includes replacing the reference number for the upper substrate "1" with --3--. The corresponding change was made to the specification. The Examiner is invited to call the undersigned attorney if further explanation is required.

Claims 1-13 are currently pending in the present application, and claims 1 and 12 have been amended. Reexamination and reconsideration is respectfully requested.

The Examiner rejected claims 1, 2, and 11 under 35 USC § 102(a) as being anticipated by Havemann et al. (US Patent No. 5,891,804). This rejection is respectfully traversed.

Claim 1 is allowable at least for the reason that claim 1 recites a combination of elements including etching a portion of the glass substrate to form a groove beneath a top surface of the glass substrate using the photoresist pattern as a mask. None of the cited references teaches or suggests each and every feature of the claims.

Column 3, lines 29-38 of Havemann et al. recites "FIG 1B show the structure after the photoresist has been patterned and the underlying layers etched down to the substrate 10." Therefore, Havemann et al. do not disclose etching a portion of a glass substrate to form a groove beneath a top surface of a glass substrate. Applicant respectfully submits that layers 44/40/42/30 are the underlying layers in FIGs 2A-2E and 3A-3G of Havemann et al. and are not a "glass substrate". In contrast, the specification discloses etching a portion of a glass substrate 1 to form a groove 152. Havemann et al. does not disclose etching a portion of a glass substrate to form a groove beneath a top surface of the glass substrate as recited in claim 1.

It appears from the Examiner's comments, that the term "substrate" can be used broadly to describe any layer on which a particular layer is formed. However, in the present invention, the term "substrate" is used to mean a glass substrate.

Applicant submits that claim 1 is allowable over the cited reference. Applicant respectfully requests that the rejection under 35 USC 102(a) be withdrawn.

Moreover, claims 2 and 11 are allowable by virtue of their dependence on claim 1, which is believed to be allowable.

The Examiner rejected claims 1, 2, 4, 5, 7, 8, 10, and 11 under 35 USC 103(a) as being unpatentable over Havemann et al. as applied to claims 1, 2, and 11 above, and further in view of Senda et al. (US Patent No. 5,364,459); rejected claims 3, 6, and 9 under 35 USC 103(a) as being unpatentable over Havemann et al. and Senda et al. as applied to claims 1, 2, 4, 5, 7, 8, 10, and 11 above, and further in view of Charneski et al. (US Patent No. 6,284,652) and/or Eriksson (US Patent No. 3,632,435); and rejected claims 12 and 13 under 35 USC 103(a) as being unpatentable over Havemann et al. and Senda et al. as applied to claims 1, 2, 4, 5, 7, 8, 10, and 11 above, and further in view of (JP 05-265040) and Applicant's Figures 1-3. These rejections are respectfully traversed.

The Examiner acknowledges that Havemann et al. does not disclose Ag and Au and the material for the reductant. The Examiner cites Senda et al. to cure the deficiencies in Havemann et al. The Examiner acknowledges that Havemann et al. and Senda et al. do not disclose the mixed solution for the electroless plating. The Examiner cites Charneski et al. and/or Eriksson to cure the deficiencies in Havemann et al. and Senda et al. The Examiner acknowledges that Havemann et al. and Senda et al. do not disclose the forming subsequent layers.

As discussed above, independent claim 1 recites a combination of elements including etching a portion of the glass substrate to form a groove beneath a top surface of the glass substrate using the photoresist pattern as a mask. None of the cited references, singly or in combination, teaches or suggests all of the features of the claims.

Senda et al., Charneski et al., Eriksson, and Applicant's Figures 1-3, all fail to cure the deficiencies of Havemann et al. since the dependent claims incorporate all of the elements of the independent claims. Applicant submits that claims 2-13 are allowable by virtue of their dependence on claim 1, which is believed to be allowable.

Accordingly, for at least these reasons, Applicant respectfully requests that the Examiner withdraw the rejection of claims 1-13 under 35 USC § 103(a) as based on any combination of Havemann et al., Senda et al. and Charneski et al.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned **“Version with markings to show changes made.”**

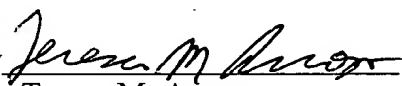
In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Applicant believes the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited. Should the Examiner deem that a telephone conference would further the prosecution of this application, the Examiner is invited to call the undersigned attorney at (202) 496-7371.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136. Please credit any overpayment to deposit Account No. 50-0911.

Dated: February 4, 2003

Respectfully submitted,

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Version With Markings to Show Changes Made

In the Claims

Please amend the claims as follows:

1. (Amended) A method of manufacturing a thin film transistor for use in an LCD device, comprising:

preparing a glass substrate and a mixed solution, the mixed solution having a reductant and a first metal;

forming a photoresist pattern on the glass substrate;

etching a portion of the glass substrate to form a groove beneath a top surface of the glass substrate using the photoresist pattern as a mask;

depositing a second metal on the glass substrate, a height of the second metal being smaller than a depth of the groove;

removing the photoresist pattern on the glass substrate and the second metal on the photoresist other than in the groove; and

forming the first metal on the second metal in the groove by submerging the glass substrate in the mixed solution.

12. (Amended) The method of claim 1, further comprising:

forming a first insulating layer over the glass substrate to cover the first metal;

forming a semiconductor layer on the first insulating layer;

forming source and drain electrodes on the semiconductor layer;

forming a second insulating layer over the whole glass substrate covering the source and drain electrode, the second insulating layer including a contact hole on a portion of the drain electrode; and

forming a pixel electrode on the second insulating layer, the pixel electrode electrically connecting with the drain electrode through the contact hole.